2012 ANNUAL REPORT
ARKWOOD, INC. SITE
OMAHA, ARKANSAS

Prepared on behalf of:

McKESSON CORPORATION
ONE POST STREET, 34TH FLOOR
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1.0 INTRODUCTION

This report presents a summary of the activities at the Arkwood, Inc. Superfund Site (Site) for the time period of January 2012 to December 2012. The main portion of the Site is located northwest of the intersection of Old Highway 65 and Cricket Road in Omaha, Arkansas and southeast of the Missouri Pacific Railroad line (see Figure 1). Soil remediation for the Site was completed in 1995 as recognized by the USEPA and the State of Arkansas at the soil completion ceremony in July of 1996.

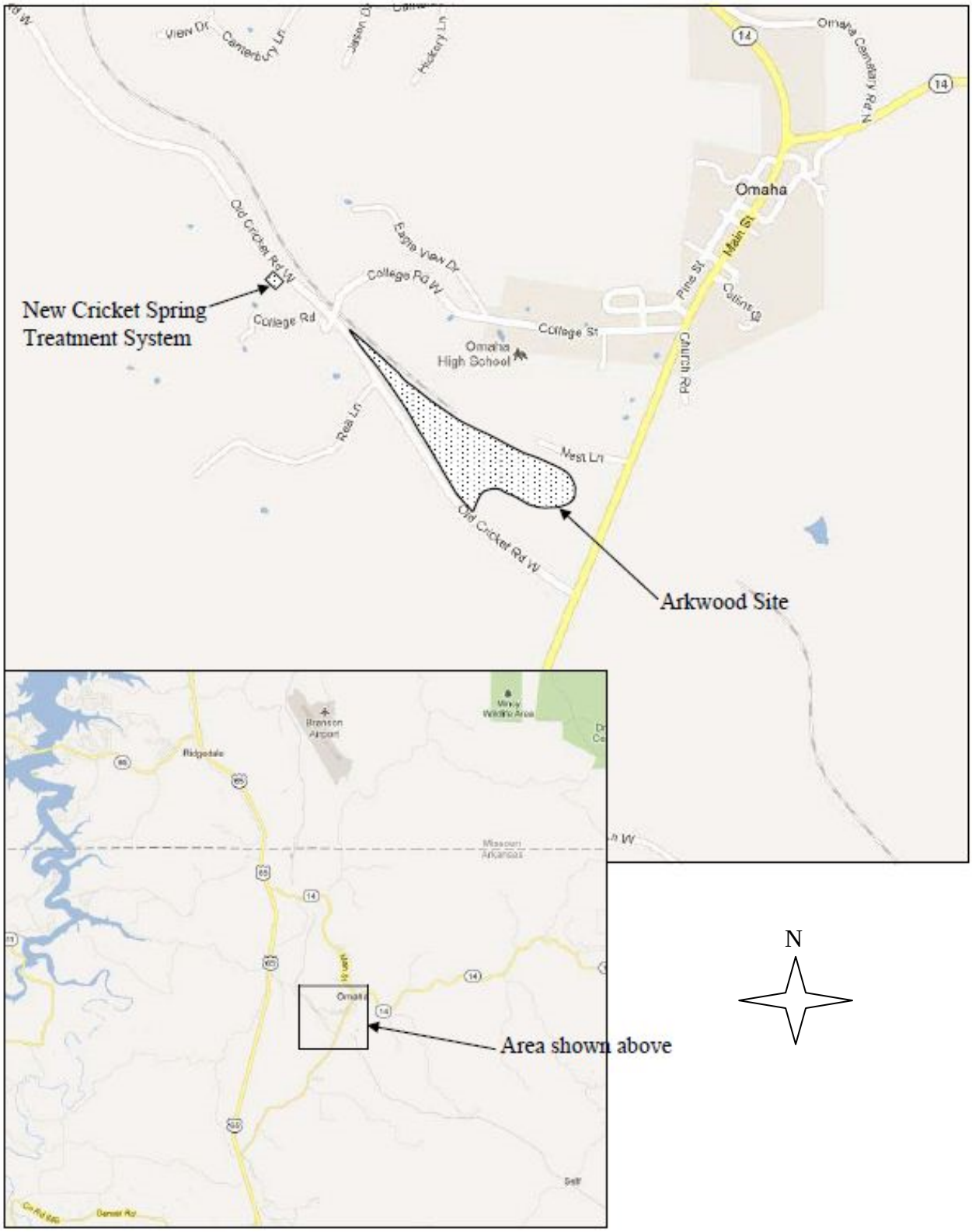
This Site is composed of an approximately 20-acre area where wood-treating and treated-wood storage occurred historically, a ditch along the railroad line, and the area within a 200 foot radius of the mouth of New Cricket Spring, which emerges approximately one-quarter mile down the valley from the Site and is impacted by pentachlorophenol (PCP). Following Site source removal and capping, a primary treatment system has operated to treat the water emanating from New Cricket Spring prior to its discharge to a tributary to Cricket Creek.

A pilot water injection system was installed in late 2005 at the main portion of the Site. The pilot system was designed to inject groundwater or ozonated groundwater into the subsurface beneath the Site to a depth of approximately 25 feet to expedite treatment of residual PCP concentrations. The goal was to reduce the concentration of PCP emanating from New Cricket Spring and to maintain a more consistent flow to optimize primary treatment system operations. During 2012, the pilot water injection system was operated using non-ozonated water from January 1 through September 10, before being discontinued so that New Cricket Spring could be monitored under natural flow conditions.

A Groundwater Remediation Summary was submitted to the agencies in June 2012 and revised in August 2012. A response to agency comments on the summary was submitted in October 2012.

A Site Inspection and Screening Risk Assessment for Dioxins/Furans was submitted to the agencies in December 2012.

Figure 1.1


New Cricket Spring
Treatment System
Arkwood Site
Area shown above
N
Omaha
Omaha High School
College Rd
College Rd W
College St
Eagle View Dr
Old Cricket Rd W
Rea Ln
West Ln
Church Rd
Pine St
Main St
Omaha Cemetery Rd N
View Dr
Canterbury Ln
Hickory Ln
Ridgedale
Missouri
Arkansas

2.0 RAINFALL

Rainfall levels in 2012 decreased substantially from 2010 and 2011 and were approximately 33% below the 2010-2012 average annual rainfall and approximately 47% less than the 2011 rainfall total. Annual rainfall for 2012 totaled 27.69 inches compared to the 2010-2012 annual average rainfall of 41.72 inches. Annual rainfall in 2011 totaled 52.01 inches and in 2010 totaled 45.47 inches. Rainfall by month and average rainfall by month are shown on Table 2.1 and Figure 2.1. Review of the data in Table 2.1 shows that the majority of the rainfall in 2010 fell in July and September followed by below average rainfall in August, October, November and December. In 2011, significantly higher rainfall amounts were reported in April and May and significantly lower rainfall amounts were reported in January, June and July. In 2012, the rainfall was more evenly dispersed with no months with very large total rainfall and only one month with less than one inch of rainfall during the month; however, the total rainfall was significantly less than average. Based on spring flow measurements, rainfall directly affects the observed flow rate in New Cricket Spring. If sufficient rainfall occurs that surface runoff develops, an increase in spring flow generally occurs within a few hours. Dependent upon the volume and duration of rainfall, the flow rate at New Cricket Spring tapers off over a period of a day to a few days to pre-precipitation flow rates.

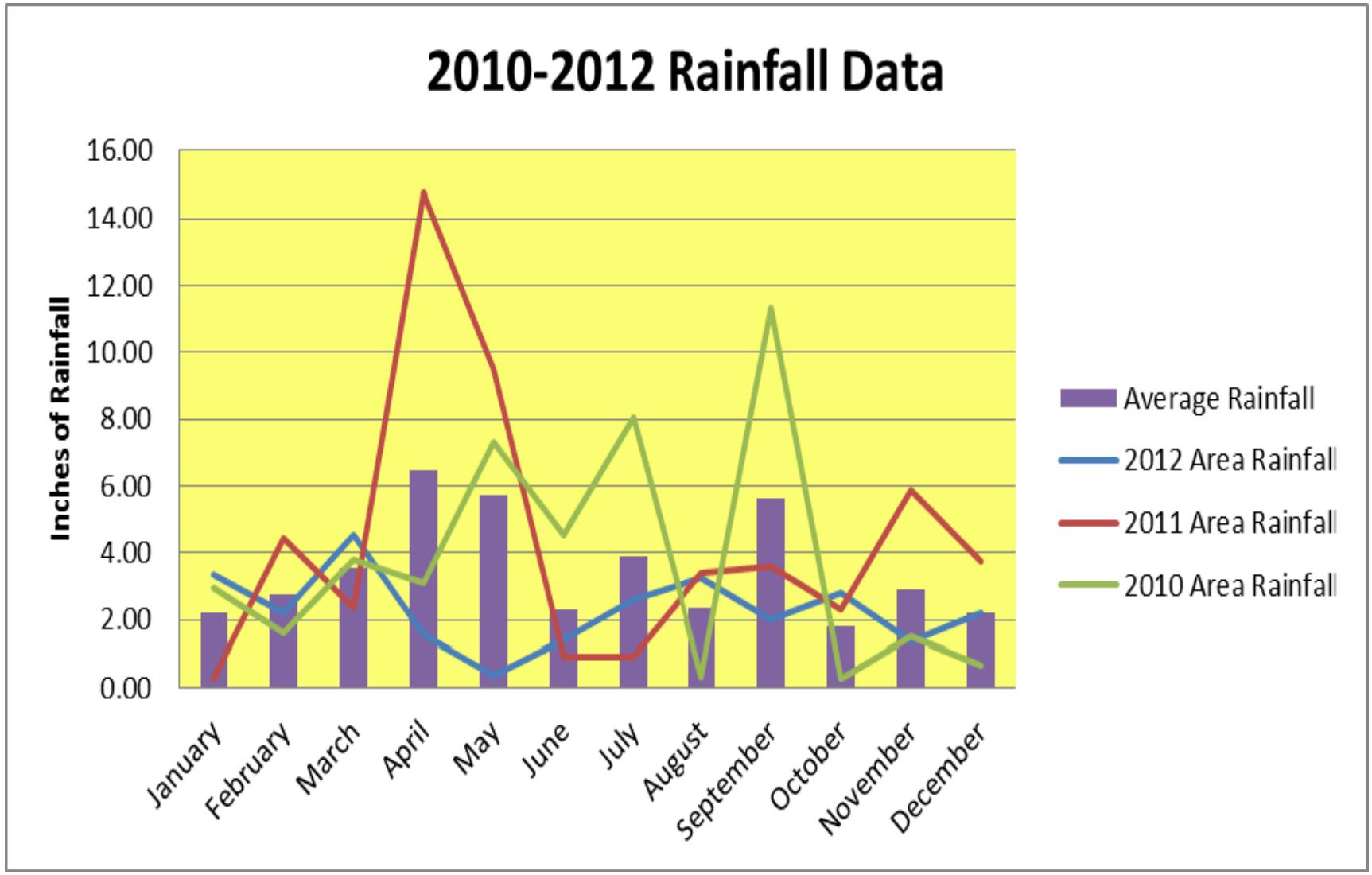
Table 2.1

RAINFALL 2010-2012

Month	2012 Area	2011 Area	2010 Area	Average
	Rainfall	Rainfall	Rainfall	Rainfall
January	3.35	0.25	2.94	2.18
February	2.22	4.43	1.61	2.75
March	4.52	2.35	3.8	3.56
April	1.56	14.73	3.08	6.46
May	0.36	9.51	7.32	5.73
June	1.41	0.93	4.51	2.28
July	2.61	0.91	8.07	3.86
August	3.26	3.41	0.34	2.34
September	2.01	3.58	11.34	5.64
October	2.81	2.32	0.26	1.80
November	1.37	5.85	1.53	2.92
December	2.21	3.74	0.67	2.21
Total	27.69	52.01	45.47	41.72

Reference www.wunderground.com

Figure 2.1


2010-2012 Rainfall Data
Inches of Rainfall
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
January
February
March
April
May
June
July
August
September
October
November
December
Average Rainfall
2012 Area Rainfall
2011 Area Rainfall
2010 Area Rainfall

3.0 NEW CRICKET SPRING WATER FLOW

As mentioned above, the water flow through New Cricket Spring responds fairly rapidly to the rainfall events reported in Section 2.0. New Cricket Spring water flow rates are recorded at the time of each sampling event. The reported monthly flow rates varied from less than one gallon per minute (gpm) (0.4 and 0.7 gpm) in September and November 2012 to 50.81 gpm in March 2012. During a period between January 1 and September 10, 2012, groundwater injection using non-ozonated water was performed resulting in increased base flow rates in New Cricket Spring. Between September 10 and December 31, 2012, groundwater injection was discontinued. Between January 1 and September 10, 2012, the flow rate observed at New Cricket Spring ranged from 13.7 to 50.8 gpm. Between September 10 and December 31, 2012, the flow rate observed at New Cricket Spring ranged from 0.4 to 4.5 gpm. New Cricket Spring water flows are presented in Section 3.0.

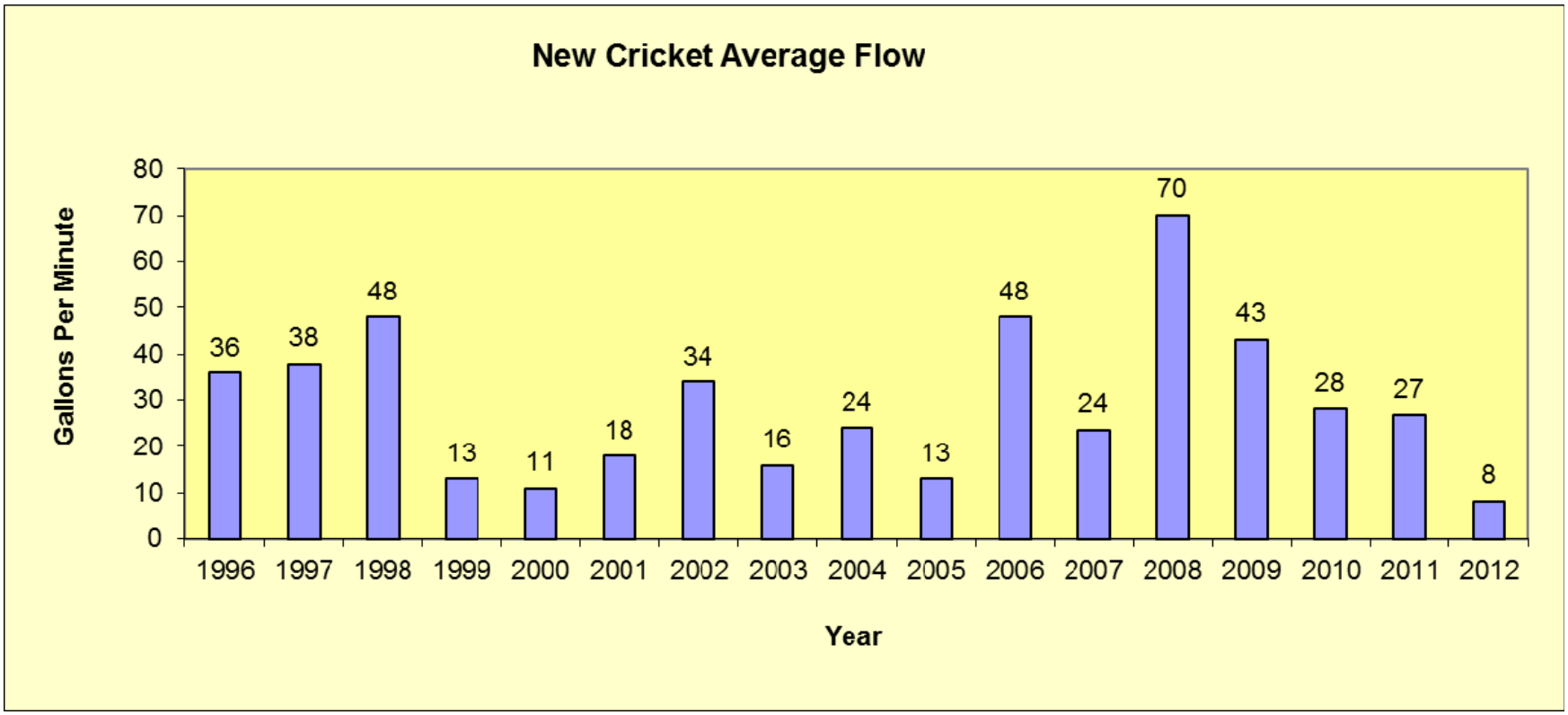
Figure 3.1 presents New Cricket Spring annual average water flows for 1996 through 2012. Injected water accounts for approximately 15 to 20 gallons per minute as measured at New Cricket Spring, when water injection is occurring. The average flow at New Cricket Spring for the period from January to December 2012 was eight gallons per minute. The 2012 average flow rate is lower than the flow rates observed during the period 1996-2011 and consistent with the drought conditions experienced throughout the region. New Cricket Spring flows for the previous 16 years plus 2012 can be viewed on Figure 3.1.

Table 3.1

New Cricket Spring
Average Flow Rates (gpm)
1996-2012

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
JAN		29	179	3	10	7	16	26	24	16	27	50	3	10	22	3	17
FEB		104	76	2	3	50	16	19	30	28	30	37	34	41	67	7	25
MAR		115	127	8	2	14	63	24	27	22	37	26	292	10	15	29	36
APR		42	36	5	8	5	70	15	22	12	54	27	104	121	20	38	8
MAY	15	18	40	8	5	5	59	22	23	9	41	21	23	177	160	163	3
JUN	6	21	9	84	8	5	95	20	16	2	10	21	285	12	23	7	3
JUL	12	12	9	6	84	17	18	12	21	6	19	19	67	27	13	1	0
AUG	7	12	20	6	1	8	8	5	17	7	17	1	9	4	0	1	1
SEP	50	16	12	5	1	6	8	2	12	13	24	21	13	2	13	0	0
OCT	12	13	20	9	1	10	8	10	32	23	43	18	1	84	0	24	4
NOV	127	30	12	6	2	9	27	22	50	8	234	18	7	25	1	10	1
DEC	58	41	33	13	4	74	23	17	12	25	39	25	4	8	4	40	1
AVG	36	38	48	13	11	18	34	16	24	13	48	24	70	43	28	27	8

Figure 3.1

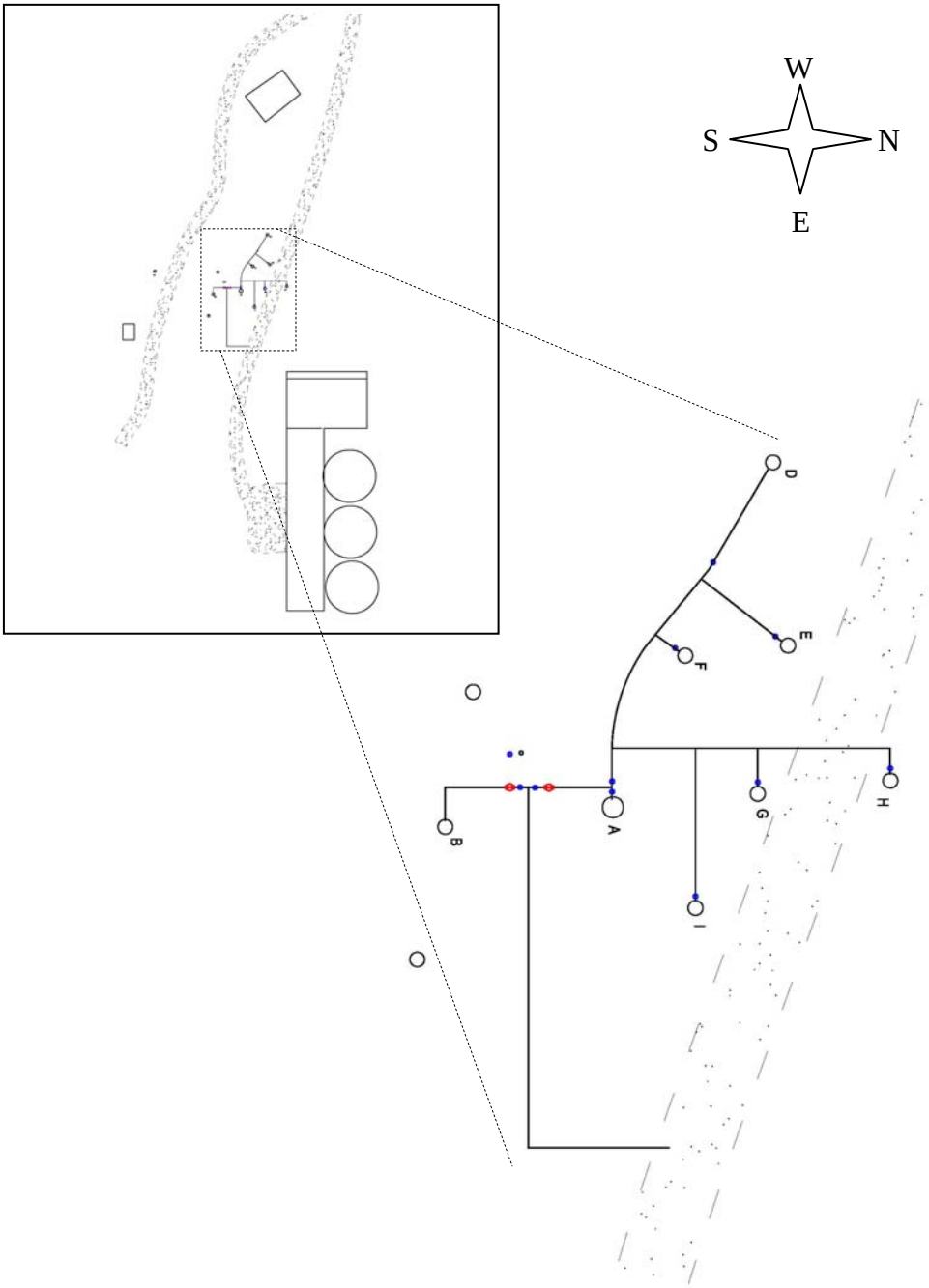

New Cricket Average Flow
Gallons Per Minute
0
10
20
30
40
50
60
70
80
36
38
48
13
11
18
34
16
24
13
48
24
70
43
28
27
8
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Year

4.0 INJECTION WELLS

Nine injection points were previously installed in the vicinity of the former sinkhole on the main Site. Most of the points only accept a limited amount of injected water and some of the wells will not accept any injected water. Non-ozonated water was primarily injected into Well A during January through April 16, 2012, Well I from April 16 to July 16, 2012, and Well A from July 16 through September 10, 2012. The injection system was shut down on September 10, 2012, with agreement from the EPA, to monitor New Cricket Spring under natural flow conditions. Figure 4.1 depicts the layout of the injection wells.

Figure 4.1

Injection well layout



5.0 ANALYTICAL DATA - WATER

Water samples were collected for analytical testing on a monthly basis at the mouth of New Cricket Spring and from the discharge zone from the primary treatment system during 2012. From January through August, the primary treatment system discharge sample was collected from the weir area at the discharge point adjacent to the treatment building. At the request of the ADEQ, the discharge sample collection point was moved downstream from the weir. From September through December, the discharge sample was collected from a point approximately twelve feet from the weir and within the discharge ditch prior to the discharge stream entering a drainage culvert. Water emanating from New Cricket Spring continues to be treated with ozone in the primary treatment system before being released to a tributary to Cricket Creek. Analytical data collected during 2012 can be viewed in Table 5.1. Data from 2007 through 2011 is included in Appendix A.

Analytical results for PCP in water samples collected at the mouth of New Cricket Spring (pre-treatment) were reported above the cleanup levels for the Site during five months in 2012 (April and September through December 2012). The cleanup levels for the Arkwood site are an allowable monthly average of 15.57µg/L PCP and a daily maximum of 20.29 µg/L.

All PCP analytical data collected from the primary treatment system discharge zone (post-treatment) during 2012 were below the reported method detection limit for PCP of 5.00 micrograms per liter (µg/L) except the June 2012 sample, which was reported below the method detection limit of 5.15 µg/L, and the December 2012 sample, which was reported below the method detection limit of 1.00 µg/L. All collected samples were submitted to Arkansas Analytical, Inc. of Little Rock, Arkansas for analysis for PCP using EPA method 8070D.

The ozonated portion of the pilot water injection system was not operated in 2012. The pilot system was operated for a portion of the year as a water injection system to continue aiding in the removal of residual PCP in the subsurface and to improve the consistency of water flow to the primary treatment system at New Cricket Spring. Non-ozonated water injection was discontinued on September 10, 2012. Monitoring at the mouth of New Cricket Spring and the primary treatment system discharge zone will continue on a monthly basis during 2013.

Table 5.1 ARKWOOD ANALYTICAL DATA 2012

	Pilot Injection Flow	Pilot O3	NCS Flow gpm	NCS-PCP ppb	Discharge Zone PCP ppb
1/19/12	40	0	31.8	<5.00	<5.00
2/14/12	40	0	40.4	6.68	<5.00
3/29/12	40	0	50.8	7.95	<5.00
4/18/12	40	0	22.5	20	<5.00
5/23/12	40	0	18.2	10.9	<5.00
6/11/12	40	0	17.9	7.13	<5.15
7/30/12	40	0	15.1	5.68	<5.00
8/24/12	40	0	13.7	<5.00	<5.00
9/24/12	0	0	0.4	73.2	<5.00
10/15/12	0	0	4.5	26.7	<5.00
11/19/12	0	0	0.7	28.8	<5.00
12/28/12	0	0	1.2	25	<1.00

NOTES: Flow rates in gallons per minute (gpm) [rounded to 0.1 GPM]
O3 injections rates in pounds per 10 gallons
NCS – New Cricket Spring
PCP concentrations in µg/L or parts per billion (ppb)

6.0 EQUIPMENT OPERATIONS

Equipment operations consisted of operating the pilot water injection system for a portion of the year, operating the primary treatment system adjacent to New Cricket Spring, and maintenance of the facilities located at the Site. The primary treatment system continues to effectively treat the PCP that is present in New Cricket Spring prior to its discharge to a tributary to Cricket Creek. The pilot water injection system, in addition to aiding in removal of residual PCP, allowed for a more steady and consistent flow to the primary treatment system from New Cricket Spring. Table 5.1 is a summary of the analytical data collected during this past year.

Operation of the ozonated portion of the pilot system did not occur during 2012; however, non-ozonated water was injected from January 1 through September 10, 2012. Injection of water on the main Site has been discontinued so that New Cricket Spring can be monitored under natural flow conditions. It may not be effective or efficient to restart the pilot water injection system.

During 2013, the pilot water injection system will not be restarted without approval from the USEPA.

7.0 SUPPLEMENTAL SOIL SAMPLING

On May 11, 2010, USEPA requested McKesson to provide data and analysis indicating if the Site was in compliance with the new risk assessment guidelines for PCDD/Fs. McKesson responded in a Site Inspection and Screening Risk Assessment for Dioxins/Furans report dated December 18, 2012.

McKesson's response initially summarized the Remedial Investigation and Feasibility Study sampling events regarding PCDD/Fs conducted in 1990, and sampling conducted during and after excavation activities based on the Remedial Objective of 20 ppb dioxin TEQ. The post-excavation confirmatory soil samples showed concentrations ranging from 0.22 to 10.98 ppb TEQ. Remediation excavations were filled with coarse material with concentrations ranging from 3.19 to 10.24 ppb TEQ, and the entire portion of the Site where wood treating operations had been conducted (not just the excavated areas) was covered with a 6-inch clean top soil cap that was seeded and has been maintained since the soil remedial action was completed.

However, the earlier soil samples for PCDD/Fs were not considered relevant to a current risk assessment of the Site because the source materials are not available for direct contact; all are effectively covered with at least 6 inches of clean soil and a well-vegetated cap. Accordingly, to provide the EPA-requested data and analyses, McKesson had the following new work performed: 1) a Site inspection; 2) collection of a series of on-Site and downstream ditch samples; and 3) performance of a screening level risk assessment. The ditch sample locations were considered likely to capture upper bound PCDD/F concentrations on and near the Site because these compounds are transported predominantly via sediment movement and are well known to accumulate in low lying areas, i.e., 'environmental sinks.' A total of five on-Site or downstream samples and one local background sample were collected and analyzed for the evaluation.

The Site Inspection and Screening Risk Assessment for Dioxins/Furans report provided to the USEPA on December 18, 2012 detailed the Site inspection, document review, and sampling and analysis information.

The report concludes that the Site inspection, the ditch and berm sampling for PCDD/Fs, and the screening risk assessment provided a reasonable basis to conclude that the Site does not present unacceptable PCDD/F risks as determined by reference to the relevant USEPA risk assessment guidelines. The report further concludes that continued operation and maintenance of the active (New Cricket Spring water treatment facility) and passive (cap/security fencing/inspection) remediation efforts should be sufficient to prevent the possible spread of any residual PCDD/F contamination and avoid appreciable risks from these compounds in the future.

8.0 CONCLUSIONS

The 2012 annual rainfall total was significantly below the historical average and consistent with regional drought conditions. January, March, August, and October rainfall totals exceeded the recent historical averages while April, May, June, July, September and November rainfall totals were well below the recent historical average. Very low natural flow rates were observed from May through December. Flow rates during these months were reported at approximately 4 gpm or less and 1 gpm or less from July through September and November and December.

The primary water treatment system continued to effectively treat water collected from the mouth of New Cricket Spring, prior to its release into a tributary to Cricket Creek. The pilot water injection system operated from January 1 through September 10, 2012 using non-ozonated water. New Cricket Spring will continue to be monitored under natural flow conditions. It may not be effective or efficient to restart the pilot water injection system. Monitoring at New Cricket Spring and the primary treatment system discharge will continue on a monthly basis during 2013.

The risk assessment screening for Dioxins/Furans concluded that the Site does not present unacceptable PCDD/F risks as determined by reference to the relevant USEPA risk assessment guidelines and that continued operation and maintenance of the active and passive remediation efforts should be sufficient to prevent the possible spread of any residual PCDD/F contamination and avoid appreciable risks from these compounds in the future.

APPENDIX A ARKWOOD ANALYTICAL DATA OCTOBER 2007 THROUGH 2011

	Pilot Injection Flow	Pilot O3	NCS Flow gpm	NCS-PCP ppb	Weir PCP ppb
10/10/07	35	2-3lb/10g	18	5.63	1.15J
10/22/07	35	2-4lb/10g	18	1190	53.7
11/5/07	35	2-4lb/10g	18	209	7.93
11/19/07	35	2-4lb/10g	18	19.8	24.1
12/3/07	35	2-4lb/10g	18	20.1	<5.00
12/17/07	35	2-4lb/10g	32	87.4	1.20J
1/7/08	35	2-4lb/10g	23	<5.00	<5.00
1/21/08	35	2-4lb/10g	23	58	<5.00
2/4/08	35	2-4lb/10g	24	52	<5.00
2/18/08	35	2-4lb/10g	83	57	15
3/3/08	35	5-6lb/10g	580	<5.00	<5.00
3/17/08	35	5-6lb/10g	44	11	<5.00
4/7/08	35	5-6lb/10g	78	10	<5.00
4/12/08	35	5-6lb/10g	240	6.5	NA
4/13/08	35	5-6lb/10g	100	6.8	NA
4/14/08	35	5-6lb/10g	78	8.2	NA
5/10/08	36	5-6lb/10g	68	75	<5.00
5/27/08	0	0	18	189	<5.00
6/9/08	35	2-4lb/10g	30	77	<5.00
6/23/08	35	2-4lb/10g	580	5.6	<5.00
7/7/08	35	2-4lb/10g	80	194	189
7/10/08	35	2-4lb/10g	140	254	20
7/21/08	35	2-4lb/10g	42	477	<5.00
8/4/08	35	2-4lb/10g	22	108	14
8/18/08	35	2-4lb/10g	36	31	<5.00
9/1/08	35	2-4lb/10g	25	32	<5.00
9/22/08	35	2-4lb/10g	40	22	<5.00
10/6/08	35	2-4lb/10g	21	20	<5.00
10/20/08	33	2-4lb/10g	21	13	<5.00
11/3/08	35	2-4lb/10g	24	<5.00	<5.00
11/17/08	35	2-4lb/10g	30	28	<5.00
12/1/08	35	2-4lb/10g	24	12	<5.00
12/22/08	33	2-4lb/10g	24	<5.00	<5.00
1/5/09	35	2-4lb/10g	32	7.3	<5.00
1/26/09	32	2-4lb/10g	27	<5.00	<5.00
2/9/09	33	2-4lb/10g	90	<5.00	<5.00
2/23/09	33	2-4lb/10g	31	6	<5.00
3/9/09	34	2-4lb/10g	30	5.7	<5.00

3/23/09	33	2-4lb/10g	30	<5.00	<5.00
4/6/09	32	2-4lb/10g	38	5.8	<5.00
4/20/09	32	2-4lb/10g	243	8.5	<5.00
5/4/09	33	2-4lb/10g	343	8.2	8.7
5/18/09	33	2-4lb/10g	51	6.2	<5.00
6/8/09	35	2-4lb/10g	38	<5.00	<5.00
6/29/09	33	2-4lb/10g	25	9.1	<5.00
7/20/09	32	2-4lb/10g	47	39	<5.00
8/10/09	32	2-4lb/10g	23.7	31	<5.00
9/13/09	32	0	22	8	<5.00
10/12/09	32	0	104	21	<5.00
11/9/09	32	0	45	<50	<5.00
12/7/09	32	0	28	8.2	<5.00
1/10/10	32	0	42	13	<5.00
2/15/10	32	0	87	11.1	<5.00
3/15/10	32	0	35	<5.00	<5.00
4/15/10	32	0	40	9.62	<5.00
5/17/10	32	0	180	11	<5.00
6/13/10	32	0	43	15	<5.00
7/8/10	32	0	33	66	<2
8/19/10	0-20	0	17	16.3	<5.00
9/21/10	34	0	33	28.2	<5.00
10/18/10	37	0	20	14.9	<10.00
11/20/10	37	0	21	4.89	<4.00
12/16/10	37	0	23.5	6.15	<5.00
1/18/11	37	0	22.8	3.39	2.86
2/9/11	37	0	26.8	10.4	<10.0
3/17/11	37	0	49.0	14.2	<5.00
4/19/11	37	0	57.5	12.5	<5.00
5/2/11	37	0	310	11	NA
5/3/11	37	0	271	8.92	NA
5/4/11	37	0	156	10.8	NA
5/4/11	37	0	123	15.8	NA
5/5/11	37	0	83	18	NA
5/9/11	37	0	33.9	43.8	<5.00
6/9/11	0	0	6.8	52.4	<5.00
7/18/11	0	0	0.6	18.6	<5.00
8/15/11	0	0	1.0	38.9	<5.00
9/13/11	0	0	0.1	<5.00	<5.00
10/18/11	0	0	23.7	52.4	<5.00
11/16/11	0	0	29.6	30.6	<5.00
12/19/11	0	0	60.2	11.5	<5.00

NOTES: Flow rates in gallons per minute (gpm)
O3 injections rates in pounds per 10 gallons
NCS – New Cricket Spring
PCP concentrations in parts per billion (ppb)
NA – not analyzed
LE – Lab Error – samples not usable